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Abstract: Large companies have recently started to incorporate renewable energy standards in their corporate sustainability goals. In particular, several companies have committed to procure a specific percentage of their electricity demand from renewable sources, i.e., reach a renewable power target by a future date. Dominant corporate procurement strategies include (i) buying power from the spot market and supplementing it with renewable energy certificates (RECs) and (ii) entering long-term bilateral contracts known as power purchase agreements (PPAs) to buy power directly from a renewable generator. Constructing a multi-period procurement portfolio containing these buying options is complex due to stochastic power demand as well as volatile power and RECs prices. In this work, we study how to set up a power sourcing policy to reach a renewable target and sustain it at minimum expected cost. We provide analytical insights on stylized models containing a few periods. We also formulate a multi-period Markov decision process (MDP) that incorporates a PPA pricing model consistent with practice. This MDP has high-dimensional endogenous and exogenous components in its state and is thus intractable. We overcome this intractability by developing a heuristic policy based on a new dual reoptimization scheme that relies on information relaxations. We find that our dual reoptimization approach outperforms commonly used primal reoptimization methods and simple heuristics on realistic instances.